

Appln No. 10/666,310
Amendment dated December 11, 2007
Reply to Office Action of September 11, 2007
Docket No. BOC9-2003-0031 (400)

REMARKS/ARGUMENTS

These remarks are made in response to the Office Action of September 11, 2007 (Office Action). As this response is timely filed within the 3-month shortened statutory period, no fee is believed due. However, the Examiner is expressly authorized to charge any deficiencies to Deposit Account No. 50-0951.

In the Office Action, Claims 10-25 were rejected under 35 U.S.C. § 101. Claims 8-14, 23, and 24 were rejected under 35 U.S.C. § 112, second paragraph. Claims 1-12 and 14-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,122,664 to Boukobza, *et al.* (hereinafter Boukobza) in view of U.S. Patent 6,681,243 to Putzolu, *et al.* (hereinafter Putzolu). Claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Boukobza in view of Putzolu.

Rejections Under § 101

As previously noted, Claims 10-25 were rejected as being directed to non-statutory matter. In particular, the Office Action states that claims 10-15 and 25 refer to software elements. Additionally, the Office Action states that claims 16-24 are also directed to non-statutory matter and should be corrected.

In response to these rejections, Applicants have amended the claims to recite only statutory subject matter. In particular, claims 16-24 have been corrected as suggested in the Office Action to recite "computer" instead of "machine." Claims 10-14 have been amended to recite a system comprising at least one computing resource, clearly reciting a hardware component of the grid environment. Claim 15 has been amended to recite a computer-readable storage medium comprising computer instructions for the previously claimed ghost agent, clearly reciting a hardware component as well.

In regards to claim 25, Applicants believe that the original claim is directed to statutory matter, as means plus function claims have been historically recognized as valid claims according to practice before the U.S. Patent Office and U.S. courts. However, in

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order to expedite prosecution of the claim, Applicants have amended the claim to recite a system comprising a processing element of a computing resource in the grid environment configured to carry out the steps listed. As such, Claim 25, as amended, now clearly claims a hardware component which is statutory subject matter.

In view of these amendments, Applicants respectfully submit that any rejections under § 101 are now moot. Applicants therefore request withdrawal of all rejections under § 101.

Rejections Under § 112

As previously noted, Claims 8 and 23 were rejected as lacking any antecedent basis. In response to this rejection, Applicants have amended Claims 8 and 23 to correct the issue raised in the Office Action, as well as to correct typographical errors. In particular, the claims have been amended to correct the dependency of the claims. For example, to clarify the issue of which ghost agents are referred to in the claims, Applicants have amended Claim 8 to explicitly recite that at least one other ghost agent is registered in the domain and that the alteration is based on the number of agents registered in the domain, which necessarily includes the ghost agent in Claim 1. Claim 23 has been similarly amended. Such an amendment is fully supported throughout the Specification. (See, e.g., para. [0032].) No new subject matter has been introduced by these amendments.

Amendments to the Claims

Although Applicants respectfully disagree with the rejections in the Office Action, Applicants nonetheless have amended the claims in order to expedite prosecution of the present application by further emphasizing certain aspects of the claims that clearly define over the cited references. Applicants respectfully assert, however, that the claim amendments presented are not intended as, and should not be interpreted as, the surrender

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of any subject matter. Applicants are not conceding by these amendments that any previously submitted claims are unpatentable over the references of record. Applicants' present claim amendments are submitted only for purposes of facilitating expeditious prosecution of the present Application. Accordingly, Applicants respectfully reserve the right to pursue any previously submitted claims in one or more continuation and/or divisional patent applications.

In this response, Applicants have amended the independent claims to emphasize certain aspects of the claims. In particular, the independent claims have been amended to recite the limitation that ghost agents are associated with a host software object in the grid environments. Furthermore, the independent claims have been amended to further recite the limitation that as the host software object moves from grid to grid, the ghost agent also moves from grid to grid. Such an amendment is fully supported throughout the Specification. (See, e.g., paragraph [0028].) Furthermore, claims 8 and 10-25 have been amended, as previously discussed. No new subject matter has been introduced by these amendments.

Aspects of the Claims

Prior to discussing the cited references, it may be useful to discuss certain aspects of the claims. The claims, as amended, recite systems and method for managing the amount of resources made available to ghost agents in domains of a grid computing environment. In the claims, a ghost agent can be associated with a host software object and can be configured to move from one grid to another in the grid environment in response to moving the associated host from one grid to the other grid, where the ghost agent is configured to replicate and record actions of the associated host.

However, the method can restrict the amount of resources available to a ghost agent in a domain of the grid environment by applying a containment policy to the ghost agent while it is operating in the domain. In other words, when a ghost agent is currently

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operating within a portion of a grid associated with a domain, the ghost agent can be registered with the domain. Consequently, a domain containment policy can be conveyed to the registered ghost agent. Upon receipt of this containment policy, the ghost agent can be configured according to the received policy. Afterwards, this policy can be used to restrict the amount of resources the ghost agent can use while operating in the portion of the grid associated with the domain.

The Claims Define Over the Cited References

As previously stated, Claim 1-25 were rejected as being unpatentable over Boukobza in view of Putzolu. Boukobza discloses a process for monitoring a plurality of object types of a plurality of nodes using a management node in an information system. Putzolu discloses a method of providing agents that move among network devices to manage the operation of the devices in the network. However, in view of all the teachings of Boukobza and Putzolu, Applicants respectfully submit that the cited references fail to disclose or suggest each and every element of the claims, as amended.

In particular, the cited references fail to disclose or suggest ghost agents that are associated with a particular host software object to monitor the activities of the associated host software object as it traverses the grid environment. Furthermore, the cited references fail to disclose or suggest that the ghost agent is also configured to move from grid to grid, following the movement of the associated host software object.

For example, Boukobza fails to disclose or suggest such an agent. In the Office Action, it is asserted that the claimed ghost agents and the autonomous agent of Boukobza operate equivalently. Applicants respectfully disagree. In particular Boukobza fails to disclose an agent associated with a host software object. Instead, Boukobza only discloses an agent associated with a node or domain. (See, e.g., Abstract, Col. 2, Lines 21-38.) The autonomous agents of Boukobza are provided to allow decentralized control of individual nodes, allowing each node to continuously and

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independently respond to changes in system performance and resources without having to regularly rely on a central system or external resources. (See, e.g., Col. 2, lines 39-55). Therefore, agents in Boukobza are never associated with particular software objects as they are not designed to monitor responses of such objects, but rather to monitor responses of the various nodes to various objects traversing the nodes.

Furthermore, even if agents in Boukobza can be associated with particular host software object, they still cannot traverse the grid. In fact, on page 5 of the Office Action, it is acknowledged that Boukobza does not explicitly disclose the step of moving an associated ghost software object from a first domain to a second domain in response to movements of the host software object. Instead, the Office Action asserts that such a capability is disclosed in Putzolu. Applicants respectfully disagree.

Putzolu discloses agents move in response to demands on device resources in order to travel to the appropriate network device and make any necessary adjustments to improve network performance. (See, e.g., col. 11, lines 49-53). That is, the agents in Putzolu, while mobile, do not follow the motion of other software objects traversing the grids as they are not associated with any other software objects traversing the grids. At the most, such agents are only associated with a node, as the agent can be configured to reside at a particular node according to a user command. (See, e.g., col. 5, lines 9-19). In fact, nowhere does Putzolu disclose an agent that can be associated with another software objects or that the agent would follow another software object automatically. In Putzolu, movement of the agent is based only on responding to commands or to problems in the network. For example, an agent in Putzolu would not travel along with software objects arriving at a node the agent is currently at. Instead, the agent of Putzolu would travel through the grid independently of any other software object, attempting to ascertain the source of software objects arriving at the node and to make any adjustments necessary to improve performance. However, this movement is independent of the subsequent destination of a software object arriving at the original node. As such, the agent of

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Putzolu does not suggest, disclose, or render obvious the step of moving an agent responsive to motion of an associated agent, as agents and software objects in Putzolu neither travel together nor are associated in any fashion. In contrast, the claims, as amended, explicitly recite that a ghost agent associates with a host software object and traverses the grids, mirroring the movements of the host software object in the grid environment.

Therefore, Applicants respectfully submit that combining the method of Boukobza to include the agent of Putzolu would not disclose, suggest, or render obvious the claimed invention. As previously stated, Boukobza only discloses stationary agents for monitoring activities within nodes. Putzolu only discloses agents that move independently of any other object in the grids. Therefore, neither Putzolu nor Boukobza disclose or suggest any configuration in which an agent would be associated with a particular host object and in which the agent would automatically move from grid to grid, following the movement of the host. At the most, allowing the agent of Boukobza to move according to the method of Putzolu would only provide agents that move from node to node to monitor activities of different nodes. However, such agents would still move independently of any other objects operating in the nodes and would not be associated with any other objects moving through the nodes.

In contrast, the claim, as amended, recite that an individual ghost agent associates with an individual host software object to monitor its actions in any grid. As recited in the claims, the ghost agent moves automatically with the associated host software object and records the actions of the associated host as the host traverses the grids of the grid environment. Thus, a claimed ghost agent can record any action of an associated host software object in any grid, limited only by any containment policies associated with a current domain associated with the portion of the grid in which the ghost agent is currently operating.

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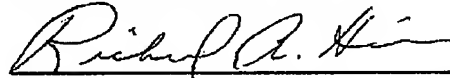
Accordingly, Boukobza and Putzola, separately or in combination with any other reference of record, fail to disclose, suggest, or render obvious every feature recited in independent claims as amended. Applicants respectfully submit, therefore, that amended independent claims each define over the prior art. Applicants further respectfully assert that whereas the remaining dependent claims each depend from one of independent claims while reciting additional features, the remaining dependent claims likewise define over the prior art. Therefore, Applicants respectfully submit that the dependent claims are patentable on their own merit over the cited references and are in a form for allowance.

CONCLUSION

Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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